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Medical and Mental Health / Better Mental Health development study protocol

Gladman JRF, Harwood RH, Jones RJ, Porock D, Griffiths A, Schneider J & Lewis S.

Divisions of Rehabilitation and Ageing; Psychiatry; Nursing; Work Health and Organisations; Social Policy and Law; Epidemiology and Public Health; University of Nottingham

**Medical Crises in Older People: a NIHR research programme 2008-2013
And
Better Mental Health: a SDO research study 2008-2011**

Undertaken by the University of Nottingham and the Nottingham University Hospital NHS Trust, UK

Workstream 1: towards improving the care of people with mental health problems in general hospitals.
Development and evaluation of a medical and mental health unit.

Workstream 2: Development and evaluation of interface geriatrics for older people attending an AMU

Workstream 3: Development and evaluation of improvements to health care in care homes

URL: www.nottingham.ac.uk/mcop

Address for correspondence: Professor John RF Gladman, Division of Rehabilitation and Ageing, B Floor Medical School, Queens Medical Centre, Nottingham NG7 2UH, UK.
john.gladman@nottingham.ac.uk



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Abstract

Background

Systematic study of the health problems and outcomes of older patients admitted acutely to general hospitals who also have mental health problems is required so that better services for them can be designed, such as a specialist unit for such people.

Primary objective

To describe and measure the health problems of older people who are admitted as emergencies to general hospital and who additionally have mental health needs, their management and their outcomes.

Design

Five related studies will be undertaken

1. A cohort study (baseline and 180 day follow-up data) of 250 older people admitted as an emergency to hospital who also have mental health problems, and of their carers, derived from screening a larger population of older emergency admissions comprising around 500 older people.
2. A diagnostic sub-study (medical and psychiatric assessment) of 50-100 of the patient participants in the cohort study with assessment of needs for service.
3. An observational study of clinical care related to the management of mental health problems on the wards used to recruit the cohort study (30 participants)
4. An interview study (post discharge) of 20-30 patient and carer participant pairs in the cohort study, and 20-30 co-patients (patients without mental health problems who shared the hospital ward of those with mental health problems)
5. A workforce study involving observations and interviews with 40 staff on study wards about the management of patients with mental health problems in general medical settings

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1 Introduction

The work that led to the NSF for Older People (2001) [1] clarified the R&D needs for its delivery:

- research into ways of reducing disability in older people, improving their health and well being and the health and well being of their carers
- reducing the need for long term care
- providing cost effectiveness data for commissioners
- developing innovative models of service delivery.

In addition current NHS policies aim to promote services for older people:

- community based services (closer to home) if possible
- acute care when needed
- partnership working (joined up care)
- fostering involvement and choice for older people and their carers.

Two thirds of NHS general (ie non-psychiatric) hospital beds are occupied by people over 65. Up to 60% of this age group have, or will develop, a mental health problem including dementia (about 30%), delirium (about 20%) and depression (about 30%). Frequently these problems will occur together. About 10% of elderly medical in-patients will have significant behavioural disturbance [2].

This group do not fit easily into general hospital services. Patients are often frail (functionally impaired and prone to deterioration), presentations are non-specific (falls, immobility, confusion, not coping) and many general hospital staff feel ill-equipped to assess or manage them. Outcomes are poor (high rates of mortality and care home placement), length of hospital stay is often long, patients may be rejected by intermediate care rehabilitation services on the basis of a mental health diagnosis, and relatives may be stressed or become dissatisfied with care.





Health care teams in general hospital settings have little psychiatric training, and may lack the necessary interest and time. These teams can call upon mental health specialists offering a liaison or consultation service to a small number of people but which may be slow and limited in the interventions that can be suggested in the general hospital setting.

Until recently, the predicament of this group of patients has barely been recognised. Consequently, their problems have been inadequately described and studied. Furthermore, we suspect that the organisational culture, systems and management practice in general hospitals may also reflect a lack of expertise in psychiatric matters, but these too have not been studied.

Nationally there exists a few specialist liaison services for older people and specialist joint medical-psychiatric units. Such services have recently been advocated in policy documents (*Who cares wins* and *Raising the standard* – Royal College of Psychiatrists [2], *Everybody's Business* – Department of Health [3]) but little research has been done on the particular needs and problems of this group, the impact of co-morbid physical and mental health diagnoses, or services to address them. Some evidence suggests that specialist services can improve outcomes [4] (eg reducing length of stay after hip fracture [5], or the incidence of delirium [6]). However other studies have been disappointing (specialist delirium assessment and management units, liaison nursing [7,8,9]).

This workstream is part of an NIHR-funded programme featuring 3 different groups of frail older people. We hypothesise that their problems are best addressed by the application of services that deliver specialist, comprehensive and co-ordinated care - "comprehensive geriatric assessment" (CGA). In CGA, patients are assessed by a multi-disciplinary team, looking not only at medical and psychiatric conditions, but also disabilities, social conditions and the environment. The team then delivers a co-ordinated programme of treatments and interventions. This specialist and holistic approach differs from usual health care which often focuses on just one problem at a time and is insufficient to improve health and well-being in this vulnerable group of patients.





The benefits of co-ordinated inter-disciplinary care have been shown in some other settings. Stroke units reduce mortality (20%) and death and dependency (32%) [10,11]. In-patient geriatric units increase the chance of patients living at home at follow up compared with general medical care (OR 1.64) [12]. This programme aims to examine whether these benefits can be achieved in the modern NHS amongst similarly frail groups of patients who have not been previously studied.

However, before we can properly evaluate an intervention such as CGA we need to ensure that it is fit for purpose and optimally addresses the problems it sets out to address. We first need to understand and quantify the particular problems experienced by patients and their carers, along with outcomes and costs, so that the service can specifically address areas of greatest need, and understand barriers to successful care. Such information is also required before the findings can be widely applied across the NHS and similar health settings. It is needed to allow business cases for services to be developed, and to provide baseline data upon which a trial can be powered.

This part of the workstream aims to provide this background information, prior to the development and evaluation of a new joint medical-mental health unit.

2 Primary objective

To describe and measure the health problems of older people who are admitted as emergencies to general hospital and who additionally have mental health needs, their management and their outcomes.

3 Secondary objectives

- To establish how many older people who are admitted to general hospitals as an emergency are affected by mental health problems and to characterise them in terms of diagnoses, disabilities and their service needs.
- To identify variables at admission associated with good and bad outcomes.





- To establish what levels of strain, general psychological health, and quality of life are found in the carers of such older people, and how these have varied by 180 days later.
- To quantify resource use in this patient group informed by description of management, using qualitative, quantitative and observational methods.
- To describe the experiences of patients and carers of this hospitalisation, their expectations and views of how the health service helped (or failed to help) using qualitative methods.
- To study the experiences, problems, reactions and training needs of relevant staff and the role of organisational structures and procedures in influencing their management.
- To inform the development of a specialist medical/mental health unit.

4 Design

This is a mixed methods study, comprising the following 5 inter-dependent sub-studies:

- A cohort study (baseline and 6 month follow-up data) of 250 older people admitted as an emergency to hospital who also have mental health problems, and of their carers, derived from screening a larger population of older emergency admissions comprising around 500 older people.
- A diagnostic sub-study (medical and psychiatric assessment) of 50-100 of the patient participants in the cohort study with assessment of needs for service.
- An observational study of clinical care related to the management of mental health problems on the wards used to recruit the cohort study (30 patient participants)





- An interview study (post discharge) of 20-30 patient and carer participant pairs in the cohort study, and 20-30 co-patients (patients without mental health problems who shared the hospital ward of those with mental health problems)
- A workforce study involving observations and interviews with 40 staff on study wards about the management of patients with mental health problems in general medical settings

5 Study wards for all sub-studies

Older general hospital in-patients are typically admitted via admissions wards. We will study older patients who are subsequently transferred to one of 12 selected wards (7 general medical wards across 2 campuses, 3 acute geriatric medical, 2 orthopaedic), agreed with operational and ward managers. Patients subsequently moved to other wards will be followed. Study wards will be recruited by approaching clinical directors, nurse managers/matrons, ward managers and consultants.

6 Cohort sub-study

6.1 Screening

We will approach approximately 500 patients (aged 70 years or over and fulfilling inclusion and exclusion criteria) on days 2-5 of their admission. This will exclude patients who are rapidly discharged. We will also exclude patients who are so ill that they are not expected to survive the admission. We will continue screening until we recruit our target sample size.

Wards will be visited by a researcher and potential participants identified by ward staff. The researcher will then be introduced to the patient by the staff member, and asked if they are happy to be asked some questions for a research project. If they are, the researcher will take verbal consent to continue. Those lacking capacity to consent will be included if they do not appear to object.





A brief questionnaire screening for cognitive impairment (abbreviated mental test score [13]), depression (GDS 4 questions [14]), anxiety (PRIME-MD questions [15]), and alcohol abuse (CAGE screening questions [16]) will be used. In addition a bespoke question is designed to capture cases where a psychiatric diagnosis is already made, behaviours associated with psychosis are noted, or cases where the participant is too agitated to answer questions.

A final question will ask about willingness to be approached further for a research study on psychological problems and their effects on patients and others on the ward.

6.2 Recruitment

For potential participants whom screening suggests may have a problem, the researcher will assess whether the patient participant has capacity to consent to take part. In all cases a family member or carer will be sought and contacted in person or by telephone to explain the study and arrange a meeting. If the patient participant has capacity to consent, permission will be sought to contact the carer first. A carer will be defined as someone who sees the patient at least once a week for a minimum of one hour. 'Carers' will have a variable relationship with the patient – from spouses and grown-up children to (closely involved) neighbours or friends. Some may have little in the way of 'caregiving' responsibilities, but will act as a reliable informant. We will identify a single 'closest' carer where a network of individuals is involved, but will welcome information from others as judged practical and appropriate. An alternative ('reserve') will also be recorded. The carer-participant will be included in the study in his or her own right (as we wish to study them also) so separate consent will be taken. The carer will be contacted in person or by telephone to explain the study and arrange a meeting, so these formalities can be undertaken.

Information sheets will be given. For patient participants who have capacity, consent will be taken, including consent to access medical records. If he or she does not have capacity, consultee agreement will be sought from the carer. The carer-participant will





also be included in the study in his or her own right (as we wish to study them also) and so separate consent will be taken. We aim to recruit 250 patient-carer participant pairs.

6.3 Inclusion criteria

- Admitted as an emergency to selected acute medical, geriatric, stroke and trauma orthopaedic wards of Nottingham University Hospitals NHS Trust, Queen's Medical Centre and City Hospital campuses, alive and still in hospital at days 2-5
- Aged 70 years or over

6.4 Exclusion criteria

- Not resident in the catchment area
- Non-English speakers without adequate translators
- Resident in a residential or nursing home without an involved family member to speak as an independent informant and advocate
- Consent/ consultee agreement unobtainable
- Those with no carer or a sole carer under the age of 18 years
- Patients admitted electively (i.e. for investigation or surgery)
- Patients unconscious
- Patients thought by their clinical team likely to die within a week (ie within 10-12 days of admission).
- Patients admitted to subspecialty wards (oncology, renal, haematology, cardiology, urology, gynaecology)
- Other specific medical need (e.g. high dependency unit, surgery)





6.5 Consent

6.5.1 For screening

This will be administered as an adjunct to 'standard clinical care', using verbal consent, or a best interests argument for those lacking capacity but not specifically objecting to taking part

6.5.2 For cohort study – if patient participant has capacity

Study introduced and information sheet given, carers sought along with permission to contact them

- Consent will be requested for i) participation in baseline data collection ii) follow up for scaled and non-scaled outcomes, and resource use iii) possible inclusion in medical and psychiatric assessment substudy iv) possible inclusion in the patient /carer experiences interview substudy
- Carer information sheets given and consent requested for carer participation
- Return later same day (or when a meeting with family/carers can be arranged) to obtain consent from both patient and one main carer participant.
- Consent confirmed verbally when making arrangements for the interview.

6.5.3 For cohort study – if patient participant lacks capacity [17]

- Study introduced and information sheet given, carers sought
- Consultee agreement requested from carer for i) participation in baseline data collection ii) follow up for scaled and non-scaled outcomes, and resource use iii) possible inclusion in medical and psychiatric assessment substudy iv) possible inclusion in the patient /carer experiences interview substudy
- Carer consent requested for carer participation
- Return when a meeting with family/carers can be arranged to obtain consultee agreement for patient and consent for one main carer participant.
- Consent confirmed verbally when making arrangements for the interview.





6.6 Baseline measurement

Social and demographic details (of patient and carer participants) will be collected from medical records, supplemented by questions to the patient and carer participants.

6.6.1 Patient participant

Admission drug history will be recorded. Patient and carer participants will be interviewed to measure patient participant health status. This includes:

- Measures from the core programme data set (common to the other two workstream theme studies; history of service use, severity of acute illness (modified early warning score at admission [18]), frailty (study of Osteoporotic Fractures scale [19]), proximity to death (Palliative Care Index [20]), pain (EuroQol item [21]), nutrition (Mini-Nutrition Assessment screening questions [22]), co-morbidity (Charlson Index [23]), cognition (Mini Mental State Examination MMSE [24]), personal activities of daily living (Barthel Index [25]), quality of life (EuroQol EQ-5D [21])
- Additional questions about mental health: delirium (Delirium Rating Scale 1998 revision, DRS-98R [26]), depression (Cornell Scale for Depression in dementia, CSDD [27]), behaviour and psychological symptoms (an adapted version of Neuropsychiatric Inventory [28]).





In practice data collection will divide up as follows, but this will be flexible depending on circumstances:

- Collected from patient participant: MMSE
- Collected from family member /carer and patient participants together; data for frailty, proximity to death index, quality of life (EuroQol), personal activities of daily living (Barthel), nutrition questions, delirium (Delirium Rating Scale), Depression (Cornell).
- Collected from family member /carer: Neuropsychiatric inventory, carer measures (see 5.2.2 below)
- Collected from notes and checked with patient participant or family member/carers: socio demographics, medical history, recent service use, admission drug history, severity of acute illness (admission early warning score), co-morbidity (Charlson)

6.6.2 Carer participant

Carers will be studied for: carer strain (carer strain index), general psychological health (GHQ-12) and quality of life (EQ5D).

6.7 Intervention record

Medical, nursing and therapy notes of patient participants in the cohort study will be scrutinised for interventions delivered as part of routine care (no additional interventions are intended as part of the research). A schema will be developed for recording them based on systems previously used by the applicants and the Australian Classification of Healthcare Interventions (the basis for the WHO classification currently in development). This will help us understand what the healthcare system is doing to help problems, will form the basis for developing a taxonomy of intervention in





this setting, and for 'bottom up' costing. It will complement patient and carer participant perceptions of what the admission achieved.

6.8 Follow up

Study participants will be in the study for a maximum of 180 days (unless there are unforeseen delays in final follow up)

6.8.1 Patient participant outcomes

Follow up will be by home visit by a research assistant 180 days (+/- 10 days) after recruitment.

A data collection form will be completed by interview. Information will be collected largely from the carer (but will involve the patient participant where feasible).

- Patient participant alone: mini mental state examination, DEMQOL quality of life [29], ICECAP quality of life [30].
- Patient participant and carer together: personal activities of daily living (Barthel Index); quality of life (EQ5D), short-form London Handicap Scale [31]; Client Service Receipt Inventory [32].
- Carer alone: Neuropsychiatric inventory for behavioural and psychological symptoms, DEMQOL Proxy for quality of life [29], carer strain (carer strain index, GHQ-12 [33,34]), and quality of life (EQ5D).

We will record mortality, care home placement, readmissions and total days spent in hospital (from the hospital administrative computer system). Process data will include where days in each type of ward, including rehabilitation, transfers out to psychiatry, and intermediate care, referrals and consultations. We will record service use using the Client Service Receipt Inventory, and will cross check this using electronic service





records for general practice, intermediate care, ambulance service and social services. These will be extracted using methods developed for another study (the Department of Health Patient Safety Research Programme PINCER trial; <http://www.pincertrial.org/>). This involves extracting patient specific data, identified by name, date of birth and NHS number, using a combination of pre written computer queries to extract specific data from a specified time period from the system, as well as a person led investigation and extraction of data using pre written protocols. Data is immediately anonymised and encrypted, before being added to the main study database on the secure University computer server.

A novel outcome measure we wish to explore is the use of 'number of days spent at home over the 180 days since recruitment'. This outcome has considerable attractions in this setting, as it combines one of the aims of care (to get and sustain someone at home), with mortality, length of hospital stay and new care home placements (key 'adverse outcomes'). We will document the distribution of this outcome in this population, and our ability to transform it into a normal distribution for analysis, and calculate range, and standard deviation, so we can consider its use as an outcome measure for a clinical trial.

6.8.2 Carer participant outcomes

We will administer questions about the carer's health (GHQ-12, Carer strain index, EQ5D).

6.9 Participant withdrawal

Participants may be withdrawn from the study either at their own request or at the discretion of the Investigator. The participants will be made aware that this will not affect their future care. Participants will be made aware (via the information sheet and consent form) that should they withdraw the data collected to date cannot be erased and may still be used in the final analysis.





6.10 Analysis

We will estimate the prevalence of mental health problems, physical co-morbidities, and behavioural and physical disabilities at admission.

We will describe outcomes in terms of mortality, care home placement, days spent at home, behavioural and physical disabilities, and carer psychological and quality of life outcomes.

We will examine the association between baseline variables and key outcomes, and develop prognostic models.

We will examine and classify interventions to define what the admission delivered in terms of healthcare interventions (broadly defined, including personal maintenance, and behavioural management of problems).

Costing study, including hospital, health service, health and social care and informal care costs, and association of cost with diagnosis and disability.

6.11 Sample size

The two campuses of Nottingham University Hospitals NHS Trust provide emergency medical admissions services to a population of some 600,000 people, constituting some 35 000 medical admissions per year (all ages). We anticipate screening 500 patients to recruit 250 participants to the prevalence survey: screen 6 per day, recruit 2.25 per day, 5 days per week, 23/26 weeks, 25% refusal. Sampling will be adjusted to give chance of recruitment by admission day of the week. Based on published figures, we anticipate a 50% rate of screening positive for mental health problems. We have two research questions on which the cohort sample size is based:

- What is the prevalence of mental health problems in patients admitted as emergencies? If we assume that the prevalence is around 50%, a sample size





of 500 will estimate that prevalence to within 5% (using a 95% confidence interval).

- What are the predictors of good and poor outcome in the subgroup with a mental health condition (based on considering number of days spent at home over of the 180 days after recruitment)

This outcome has considerable attractions in this setting, as it combines one of the key aims of care (to get and sustain someone at home), with mortality, length of hospital stay and new care home placements (key 'adverse' outcomes). There is no existing data on the distribution of this outcome (indeed, we wish to determine this prior to possibly using this outcome in a trial). We will be assuming it can be transformed to a normal distribution, so with 250 patient participants we will be able to fit a linear regression model with 15 potential explanatory variables (based on a maximum model with the number of variables equal to the square root of the sample size). Alternatively we will define a poor outcome as mortality, behavioural deterioration and new institutional placement combined.

6.12 Economic analysis

The perspective for costs taken will include both the informal carer and third party payer: NHS, personal social services and private care home sector .

We will examine total costs, and variation of costs with important baseline variables such as diagnoses, presenting problems, disability and living arrangements.

7 Diagnostic sub-study

Separate subsamples of 50-100 will be asked to undergo a systematic assessment by a geriatrician and psychiatrist, using medical notes and history, examination (using a standard structured psychiatric interview schedule of mental state, the Geriatric Mental State, GMS) and whatever investigations have been undertaken for clinical purposes





(i.e. no additional investigations will be ordered). Recruitment will be based on clinician availability, but will approximate to a 1 in 5 sample. Where possible we will use a random sample of consecutive enrolments. Consent / consultee agreement will be obtained at recruitment to the cohort study, and confirmed verbally when making arrangements for the assessment.

Research diagnostic criteria will be applied formally to document precise psychiatric diagnoses. A semi-structured medical 'problem list' will be assembled comprising an assessment of disability, diagnoses, relevant routine physiological measures and test results and relevant social, environmental and psychiatric problems grouped according to relationship to problem.

From this a model intervention plan will be assembled to define physical and mental health 'need for service' (potential to benefit from an intervention). We will interpret (or 'validate') the data from the screening scales and baseline measurement scales against the geriatrician and psychiatrist assessment. We will identify unmet need, defined in medical and psychiatric service terms.

8 Ward observation sub-study

Observation will focus on individual patient participants who have been recruited to the cohort study, and concern naturally occurring situations on wards. In addition to observation of the general ward throughout a 24 hour a day/7 day a week timeframe, observations may also include attendance at multidisciplinary case conferences and family consultations as they occur, if they are of direct relevance to the individual participant, but only with the agreement of the carer or consenting participant themselves.

We anticipate at least 8 individual periods of observation of up to 2 hours each across the wards (8x2=16 hours minimum per patient participant). A maximum of 30 patient participants will be observed.





In each situation, the observer will be watching and listening for actions, behaviours, words and phrases, the use of euphemism or jargon related to care or questioning about the diagnosis, prognosis, communication or management of the older person from their own perspective. The observer will assume a non-prominent position in order to minimise influence on the dynamics of ward activities. Where appropriate, the observer may ask questions of one or more participants to clarify the nature of the interaction that had just been observed. It is unlikely that participants with limited capacity will be asked specific questions, although if approached they will be treated with respect and acknowledged. If patients approach the researchers and wish to engage them in conversations, the researcher will politely engage with the older person to ensure that their safety and wellbeing as far as possible is not compromised and then recommence the observational fieldwork as appropriate. For this reason this approach cannot be considered strictly non-participant observation. This is the reality of working in a complex environment.

Any field notes taken during the observation will be made in a discrete manner where appropriate and notes will be recorded immediately after the observation. The field notes will be unstructured initially but will become more structured and focused as a result of the ongoing analysis to reflect the need to follow up on particular ideas or themes that emerge. No audio recording will take place within the ward areas during the observations.

Patient and carer participants will have been asked for consent to observe ward care. Staff and other patients on the ward will be informed that the research is going on by posters placed on the wards. Specific consent will not be taken (as it would be impractical), but the observer will use professional discretion, and will not specifically record interaction or care that does not relate to consented participants. Requests to cease observation or recording will be respected.

Data from the observational sub-study will be analysed with those from the home interview sub-study (see 11.3).





9 Home interview sub-study

9.1 Recruitment

A purposive sample of patient participant and care-participant pairs will be selected to have a semi-structured qualitative interview 2-3 weeks after discharge. They will be selected on the basis of psychiatric diagnosis, ward type where managed in hospital, physical and behavioural disability, and care or accommodation arrangements. Analysis will be performed in parallel to recruitment and interview, so the content of interviews develops as data emerges. Selection will be determined by the researcher on the basis of emerging themes, and recruitment will continue until data saturation.

Some patients, themselves not suffering from a mental health problem, as judged by the screening questions, sharing a bay with a behaviourally disturbed patient, and who are expected to stay in hospital for at least 2 weeks (co-patients), will be invited to take part in an interview study after discharge. Behavioural disturbance will be defined definition as any aberrant behaviour, associated with a mental illness, causing disruption or distress to others on the ward, identified following consultation with ward staff, and including wandering, shouting, disturbance at night, or being aggressive to staff or others.

Formal consent will have been sought in principle on joining the cohort study. This will be confirmed verbally for patients, carers and co-patients when making arrangements for the interviews.





9.2 Interviews

9.2.1 Patient and carer participants.

About 2-3 weeks after hospital discharge patient-carer participant pairs will be visited at home for a semi-structured interview. It will follow an approach developed in a previous study of dying. The interview will cover the problems that led to admission, what they perceived happened in hospital, what they wanted and expected, what helped and what did not help, discharge arrangements, resettlement at home, transfer of care to community services, and ongoing problems. This will provide a flexible means of opening up the topic for discussion. Issues of communication and decision making between staff and family carers, and the adequacy of family understanding and involvement in the process of care will be explored. In cases where the patient participant died in hospital, interviews will be deferred for 6-8 weeks, according to previous practice in interviewing bereaved relatives [35]. We recognise that responses may be limited from participants who have mental health problems, but we will be as inclusive as possible.

Interviews will be audio recorded and later transcribed (or detailed field notes taken as the researcher thinks fit and according to the preferences of the respondents).

Anonymity will be assured.

Additional questions and topics will arise from the interviews and these will shape the issues to be addressed in subsequent interviews in an iterative process, until data saturation occurs (no new themes or issues emerging – typically this happens within 20-30 interviews).





9.2.2 Co-patient

Patients without mental health problems identified as sharing a bay with behaviourally disturbed patient will be interviewed about 2-3 weeks after hospital discharge to document experiences, reactions and suggestions for better management. We will audio-record and subsequently transcribe interviews.

9.3 Analysis

The qualitative software programme NVivo8 will be used to facilitate the process of data organisation, retrieval and cross comparison. Ward observation notes, field notes and research diaries kept by the researchers and transcribed interviews will be entered into the research database kept securely on the University fileserver, and all paper and taped material kept securely. Analysis of the interview and observational data will use a constant comparative method to generate categories, patterns and themes from the textual data. Thematic analysis will be developed through an iterative process of reflection, scrutiny of the notes and transcripts and discussion between the researchers. This process will be carried out by drawing on a priori issues and questions derived from the aims and objectives of the study, as well as in vivo issues raised by the respondents themselves and views or experiences that recur in the data. All the data relevant to each thematic framework or index will be identified using a coding system.

To ensure interpretive validity, the themes and categories will be continually compared within and across transcripts, noting similarities and differences. All cases will be scrutinised and assimilated in a continuous process of data analysis until a point of saturation is reached. This involves generating succinct summaries of core observations and conversations and necessitates building encompassing concepts from these. These themes and categories are gradually refined and reduced, by grouping them together in a process of progressive focussing. Using two employed researchers in this process will help to provide a critical view to the data, identify issues common to both studies, and resolve apparent inconsistencies between them.





10 Workforce sub-study

The workforce study will be performed alongside the observational and home interview sub-studies. The NHS as an organisation is complex and difficult to study. To our knowledge there has been little previous systematic study of the views and expectations, training and support needs of staff working in this field, nor of the effects of organisational structure, policies and procedures. We will search and review the literature prior to commencing our study.

10.1 Wards

Wards will be recruited for inclusion in the study by agreement with Trust operational management and the ward manager concerned. We will use the same wards to study staff as we use to study patients and carers. A structured sample of staff involved in the delivery of care to patients and carers will be invited to take part.

10.2 Observation

Non-participant observations will be conducted by Occupational Psychologists in designated wards at the same period as the patient participant observations. This will enable them to familiarise themselves with working conditions in those wards, will assist in the design of the bespoke semi-structured interview schedule for staff, and in the final analysis of data triangulation. The focus will be on work analysis - the nature of the demands facing staff in these wards, and how they deal with older patients with mental health problems (particularly challenging behaviours) in the ward environment, and how work design, management and organisation might impact on these issues.

10.3 Documentary data

Additionally ward rotas, staffing levels, job descriptions and general patient dependency levels will be collated as relevant documentation to assist in gaining a





broader view of the organisational issues surrounding the ward during the period of investigation.

10.4 Interviews

A wide range of staff at all levels, from consultant to ward cleaner, will be approached (with advice from the ward manager) for interview to elicit their experiences and views of working with older patients with mental health problems within a ward environment. Key individuals not based on the ward will also be invited for interview: for example, occupational therapists, speech and language therapists, social workers, porters and clergy. 40 confidential interviews, each of about 20 minutes' duration, will be carried out.

The semi-structured interviews will be designed from issues noted during the observational study, factors arising from the literature review, and an initial focus group with volunteer staff from a non-study ward. Discussion points might include, for example, factors such as, workload, training, perceived capability, break-taking, pressure points (peaks and troughs), the physical work environment and equipment, shift patterns, support, and the management of critical incidents. The interviews will take place at a time to suit the staff and in a place to protect confidentiality.

The interview questions will address these areas:

- Staff's concerns and anxieties about dealing with older patients in general, and those with mental health problems in particular, and the implications of those concerns for their own job satisfaction, job and organisational commitment, career plans and well-being
- Staff's confidence in their own competence to deal with such patients (knowledge, skills, experience, education and training, continuing professional development) and their perceptions of their abilities to provide a good service
- The prevailing organisational culture (hospital and ward level) regarding older people and possible knock-on effects on staff attitudes, behaviour and practice





- Organisational systems and management policies and practices (both formal and informal) and their suitability for older people with mental health problems
- Staff's suggestions for systems-level improvements to service delivery for these patients, as well as for personal/professional development.

All interviews will be digitally recorded and fully transcribed.

10.5 Analysis

Key themes emerging from the interviews will be summarised and discussed with expert stakeholder groups with a view to eliciting suggestions for possible improvements to staff recruitment and selection procedures, and professional training, and the organisation and management of their work.

Standard occupational psychology work assessment approaches will be used. Standard methods of the analysis of interview data will be used - constant comparative methods to generate categories, patterns and themes from the textual data. These data will be triangulated with observational field notes, and information on organisational structures and procedures to generate a framework for understanding the workforce issues for those caring for this patient group, for identifying likely major priorities, and for generating testable hypotheses in the form of intervention design.

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